

Army Model And Simulation Executive Council (AMSEC)

7 APRIL 2004

PURPOSE

The AMSEC is the principal council that adjudicates issues governing all M&S activities in the Army

AGENGA 2 Hours

SUBJECT	Presenter(s)	Time
Welcome & Opening Remarks	Mr. Lunceford	10
Geospatial Master Plan	COL Stone	20
C3 Modeling Environment	Mr. Bauman	20
POM Status	Mr. Gordon Weed	10
Domain Evolution Plans	Domain Managers	30
AMSEC Chair & Vice Chair Discussion	Mr. Hollis	25
Recap Actions	AMSO	5

OPENING REMARKS

Mr. Lunceford

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The background of the slide is a photograph of a military scene. In the foreground, a large military vehicle, possibly an armored personnel carrier or a transport truck, is parked on a dusty, unpaved road. It has a metal cage-like structure on its back. In the background, there are several brick buildings, some with flat roofs and others with domes, suggesting an urban environment in a developing country. The sky is hazy or overcast. The overall tone of the image is somewhat muted and dusty.

ARMY GEOSPATIAL DATA INTEGRATED MASTER PLAN (AGDIMP)

Briefing to

**Army Model and Simulation
Executive Council (AMSEC)**

7 Apr 04

**Presented by
COL George Stone (DAMO-ZS/ZT)**

PURPOSE

**Provide Background
Information
on status and progress of
Army Geospatial Data
Integrated Master Plan
(AGDIMP)**

GROWING DEPENDENCY ON GEOSPATIAL INTELLIGENCE

- **Geospatial Intelligence enables FCS**
 - **Battle Command**
 - **En Route Mission Planning and Rehearsal**
 - **Embedded Training**

But FCS is just the first of many systems
- **Other Systems**
 - **Joint Mission Planning System, Unmanned Combat Air Vehicle**
 - **Geospatial Intelligence data enables the JNTC by establishing a seamless LVC environment across the services for timely, correlated and normalized distributed data sets.**
 - **Littoral Combat Ship & Advanced SEAL Delivery System**
 - **F/A-22 Raptor & F-35 Joint Strike Fighter**
 - **Small Diameter Bomb**
 - **Expeditionary Fighting Vehicle**

All services have identified enhanced needs for geospatial intelligence... a joint/DoD/National requirement

BOTTOM LINE

- **Defense Agencies (NGA) Cannot Meet Current Requirement within Current Budget Priorities**
- **Future Force/FCS Requirement is More Technically Complex, Costly, and Time Consuming Than Current Requirement (fact or fiction?)**
- **Army has Very Limited Capabilities to Generate FCS Common Operating Terrain**
- **No Single Technology Silver Bullet...but Most of the Problem isn't Technology Limited**
- **Army Cannot Solve Problem Alone (NGA, Joint/Svcs are Critical Partners)**

THERE IS A PROBLEM BUT IT IS WORKABLE

MAJOR SHORTCOMINGS OF CURRENT Geospatial Data

- **Lack of Enterprise Solution to collect, manage, exploit,
and disseminate geospatial data**
- **Lack of data formats/standardization across
Services**
- **Shortage of available bandwidth to
disseminate
geospatial data**
- **Lack of Archived Geospatial Data (Feature
Data/1:50K)**
- **Lack of Ability to Rapidly Build Geospatial Data**
 - **Shortfall of In-theater Assets to Build Data
Locally**

BACKGROUND: G-3 DIRECTIVES

□ 8 Jul 2003: ADCS, G-3 approved development of an Army Geospatial Data Integrated Master Plan

→ Definition of an End To End Process (Horizontal and Vertical)

→ Recommend policy changes (AR 115-11, AR 5-11, etc)

→ Need to Also Address Doctrine and Architecture Issues and determine the need for CRD

→ Integration of all Army geospatial data users

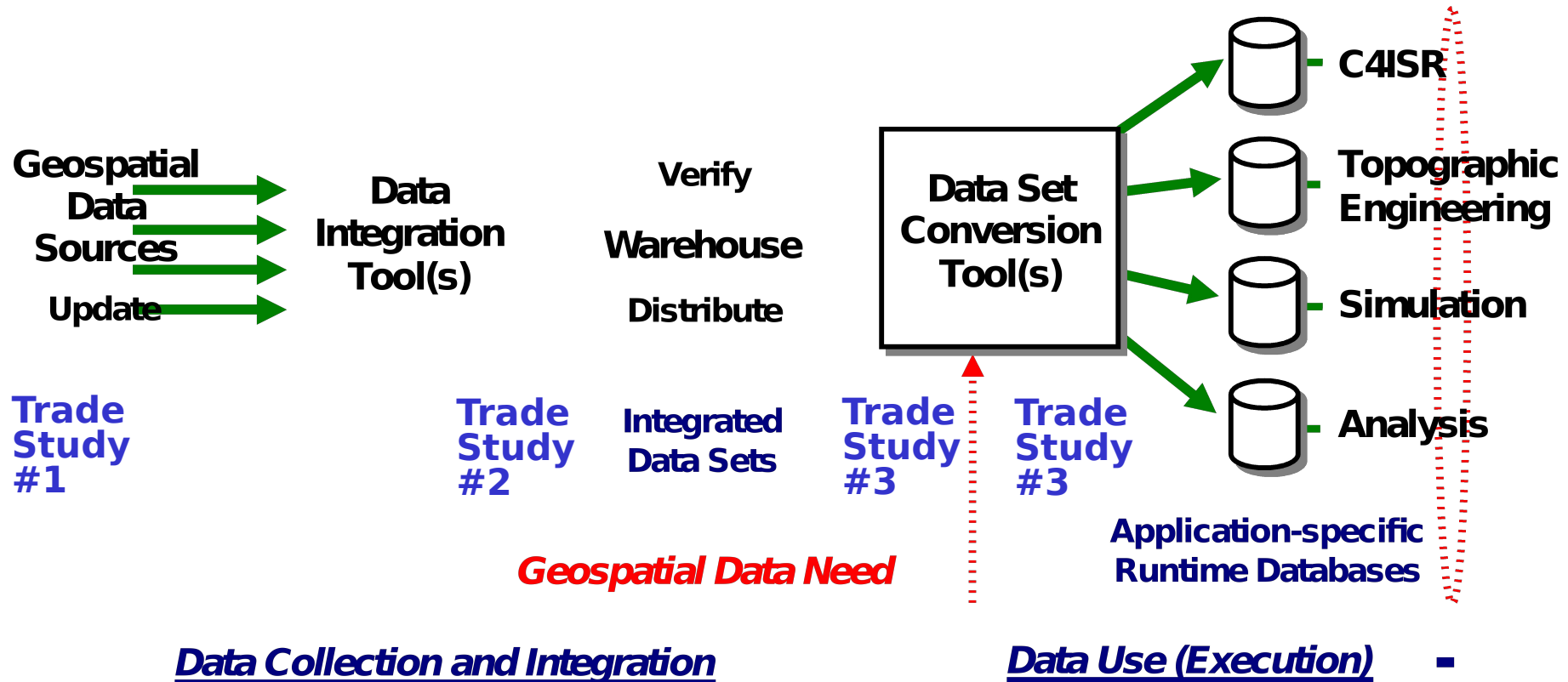
→ Mission planning/mission rehearsal (MP/MR), training, command and control, embedded training, Intelligence, Surveillance, and Reconnaissance (ISR), etc.

→ Identification of funding requirements:

→ POM 06-11

→ Refine year of execution (FY04/05)

NEW GEOSPATIAL DATA PROCESS



Trade Study #4: Joint Considerations
- Joint Geospatial Enterprise System
- Joint Program Office

MASTER PLAN TIMELINE

- **ADCS, G-3 Brief** **20 Jun 03**
- **G-3 Tasking Memo** **8 Jul 03**
- **Conduct IPR to 2 Star BCGOSC** **Cancelled**
- **Initial DRAFT Master Plan** **25 Aug 03**
- **Conduct Briefing to Ms. Condon** **17 Sep 03**
- **Complete DRAFT Master Plan** **29 Dec 03**
- **Complete Integrated Master Plan** **April 04**
- **Conduct IPR to 2 Star BCGOSC** **TBD**
- **Conduct IPR to 3 Star GOSC** **TBD**
- **POM/JCIDS Submission** **TBD**

JOINT GEOSPATIAL COLLABORATION

- **JFCOM, USAF, USMC, USN support data enhancement in a Joint Enterprise solution for POM 08-13**
- **ICD for Enterprise Solution is in Draft; currently preparing to staff world-wide**
 - **Includes a Joint Geospatial test bed to solve requirements, architecture and Enterprise issues (FY 04-06)**
 - **Establishes Joint Geospatial Enterprise agency**
- **Target for JROC approval of JGES ICD is Sep 2004**

The Way Ahead

- **Continue Revising the AGDIMP in concert with the JCIDS process and Develop a single MDEP in POM 08/13 to support current and future battle command systems**
- **Establish standards to drive interoperability for C4I and Geospatial systems (e.g., FCS)**
- **Provide for a Joint Force/Service “data enhancement” capability**
 - **Army Cannot Solve Problem Alone (NGA, Joint/Sycs are Critical Partners)**

CONCLUSION

- **The AGDIMP will be a living document and is planned for approval by CSA**
- **Coordination of a Joint Geospatial Service in the GIG-ES is through the JBMC2 JCIDS process as led by TPIO TD and JFCOM**
- **The Team will oversee the development and coordination of a Geospatial End-to-End Process in a Geospatial Testbed in conjunction with JNTC RD3 and other BC efforts (e.g., FCS C2/CSE, CPOF)**

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Communications Network Modeling

Michael F. Bauman

AMSEC

Pentagon, 7 April 2004

Purpose

To inform the AMSEC and garner its support for an organized and resourced program to sustain modeling of the communications network.

To date, sponsored by AMSO and PM FCS, an *ad hoc* group of SMEs has met twice (16-17 Dec 03 & 4 Mar 04) to address the way ahead for communications modeling. SMEs include knowledgeable veterans of modeling communications who contributed first-hand to recent advances in support of FCS program.

FCS PM	FC AIMD	RDECOM	
CERDEC	AMSAA	AMSO/G3	AAIC/G6
TRAC			
ATEC	MITRE	JHU-APL	
OneSAF PM			

Definitions

Communications Network: That part of the overall force network that pertains to the transmission or distribution of data.

Communications Modeling Program: A coherent, organized effort performed by multiple stakeholder agencies collaborating together, but centrally funded with a dedicated funding line. Not a program in the sense of an “acquisition program.”

Background

Network performance modeling is not new (e.g., OPNET, NAM, ALCES, QUALNET).

But it has been very difficult to satisfactorily incorporate and apply within force level models.

Future force concepts require a strong association between the network and the force in modeling and analysis.

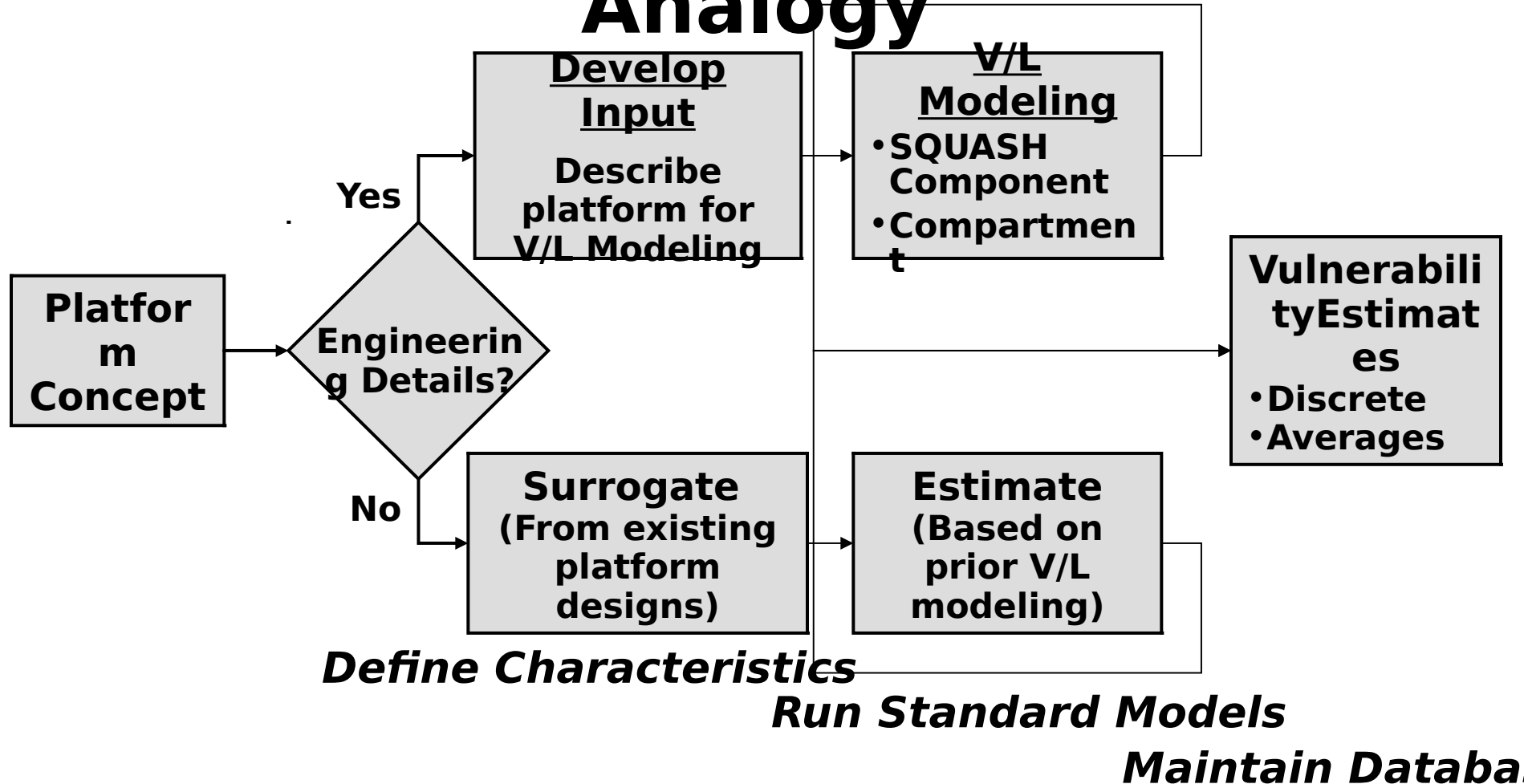
The FCS program has been the catalyst for pioneering new ways to incorporate network modeling within force-level models.

However, progress to date is largely unrecognized by senior leaders and is not sufficiently organized or resourced to be fully leveraged upon and sustained.

Problem

- The collective effort to date, while demonstrating real tangible progress, is:
 - Largely “ad hoc.”
 - Focused on supporting FCS.
 - Limited in application to a subset of Army simulations.
 - Funded piecemeal and inadequately.
 - Not readily recognizable by Army leaders and therefore not as strongly supported as it should be.
 - Not a well-organized and strongly managed “Army Program.”
- If progress to date is not built into and sustained as a coherent program moving forward, it will be a significant lost opportunity for the Army.
- A coherent comms modeling program is necessary (and would be tremendous Army

Vulnerability Model Analogy



This process exists today for Lethality, Vulnerability, Sensors, and Mobility; and is now coming together for Communications.

Methodology 2003 FCS AoA

Doctrine, Policy & Architectural Guidance

- C4ISR Framework Guidance 2.0 (DoD. 18 DEC 97)
- Army Enterprise Architecture Guidance Document (G6. V1.1 23 Dec 98)
- UA C4ISP (6 Jan 03)
- Army Universal Task List, FM 7-15, (18JUL02)
- Universal Joint Task List, CJCSM 3500.04B, (10CT99)
- UA O&O (25 Nov 03)
- UA Force Design
- FCS ORD (25 Nov 02)
- FCS SoRC (2 Nov 01)

Scenario Products

- Caspian Sea Vignettes
- Operations Plan, Support Plans
- Task Organization
- Derived Information Requirements
- Mission, Task, Purpose
- UE1, UE2, Joint Augmentation List

Establish the Communications Framework

- CECOM-MITRE-APL
- JTRS Cluster 1
 - Wideband Network Waveform (WNW)
- JTRS Step 2c
 - Clustering Algorithms
- Wireless Local Area Network (WLAN)
- Small Unit Operations Situational Awareness System (SUO SAS)
- Ka-band SATCOM
- UHF SATCOM
- Protocols
- Open Shortest Path First (OSPF)
- Radio Open Shortest Path First (ROSPF)
- Transmission Control Protocol (TCP)
- User Datagram Protocol (UDP)
- Internet Group Management (IGMP)
- Protocol Independent Multicast-Dense Mode (PIM-DM)
- Carrier Sensed Multiple Access (CSMA)
- Dynamic Time Division Multiple Access (TDMA)
- 802.11b

Architecture Development

Lead System Integrator (LSI)

- Modeling Views (By Vignette)
- OV1 - Operational Employment Description (TBP)
- OV2 - Connectivity Diagrams (TBP)
- OV3 - Information Exchange Requirements (augmented) (TBP)
- OV4 - Force Structure (TBP)
- OV6 - Operational Activity Sequence and Timing Description (TBP)
- SV1 - System Interface Descriptions (TBP)
- SV6 - System Data Exchanges (TBP)

Architecture Development

CECOM-MITRE-APL

- OV1 - Operational Employment Description
- OV2 - Connectivity Diagrams
- OV3 - Information Exchange Requirements
- OV4 - Force Structure
- OV6c - Execution Matrix
- SV1 - System Interface Descriptions
- SV2 - Notional Communications Architecture

High Resolution Commo Performance Modeling

CECOM-MITRE-APL

- High-Fidelity OPNET Models
 - JTRS Step 2c
 - SUO SAS
 - WLAN
 - KaSAT
- Link Budgets and Propagation Models
 - Terrain Integrated Rough Earth Model (TIREM)
 - Foliage Model
 - Analytical Models
 - UHF SATCOM

Communications Inputs

CECOM-MITRE-APL for CASTFOREM

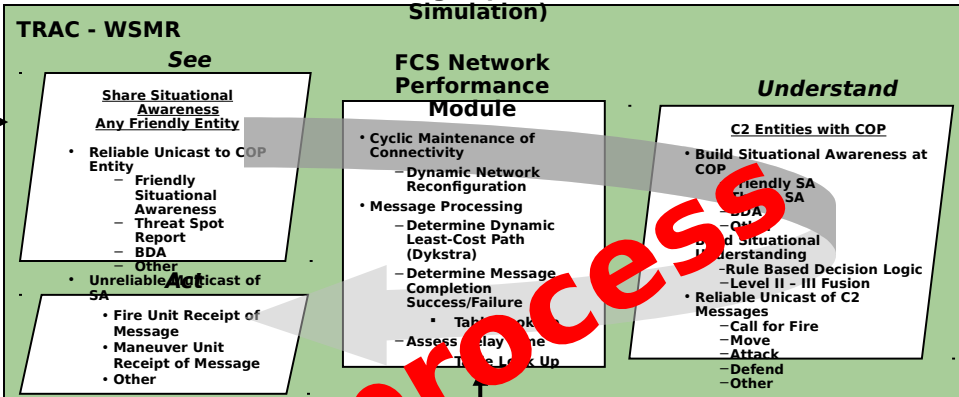
- Develop / Per-Packet Competition Rate and Delay Statistics
- Performance Models (CINET)
- Analytical Models
- Network Organization
- LSI Modeling View
- Message Source and Destination(s)
- Message Size
- Message Type
- Traffic Profile
- Quality of Service
- Message Priority
- Service Type
- Streaming vs. Non-Streaming

Communications Inputs to Force-on-Force Modeling

CECOM-MITRE-APL for VIC

- Communications Products (12)
- Average End-to-End Delay (sec)

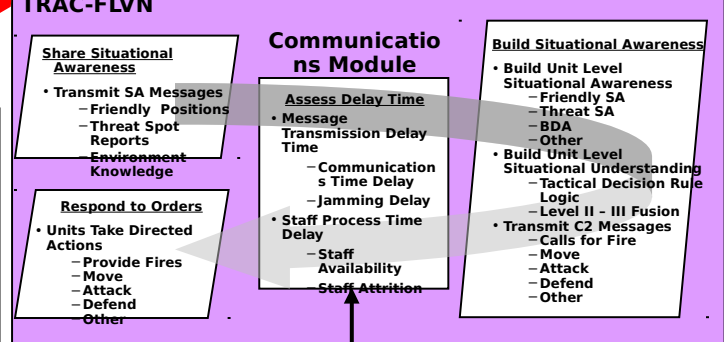
Force-on-Force Modeling Representation (CASTFOREM Simulation)



F-O-F Simulation Outcomes

F-O-F Simulation Outcomes

Force-on-Force Modeling Representation (VIC Simulation)



Notes:

- C4ISP and Army Knowledge Enterprise Architecture Guidance Document are key inputs to the development of a tailored architecture.
- JTRS model will be representative of a single model, the Wideband Networking Waveform (WNW).
- JTRS Cluster 1 model is surrogate by an enhanced JTRS Step 2c model with an increased transmission rate of 5 Mbps.
- LAGs and PAMs are not modeled as stub networks in the High Resolution Communications Performance Modeling as envisioned in the UA concept.
- UGS are modeled as stub networks in the High Resolution Communications Performance Modeling as envisioned in the UA concept.
- CL IV UAVs are modeled as point-to-point links where the TCDDL links for sensor UAVs are surrogate by point-to-point Cluster 1 links. CL III UAVs participate in the ad hoc backbone network.
- SATCOM has not been implemented in the communications model for CASTFOREM for the Caspian Sea Vignettes.
- Dismounts are modeled as SUO SAS-based stub networks.
- *LSI model views integrated with CECOM-MITRE-APL high resolution communications modeling results for use in force-on-force models.

Inputs/Outputs

Process/Models

Source Documents

CECOM-MITRE-APL Support Activity

CASTFOREM

VIC

LSI Support Activity

Illustrative Mission Thread Modeled

2004 FCS KPP Analysis

1

UAVs screen along PL Axis and detect Red ADA unit; spot report sent to BN ISC for processing

Weather affects performance of the UAV sensor and the comms network.

Message Completion Rate - MCR

Network MCR is reduced to .8; and 2 time sensitive spot reports (with *inaccurate ADA locations*) arrive past their time standards.

Message Timeliness Rate - MTR

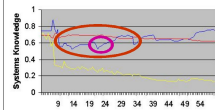
$MCR = 80\%$ (8/10 completed messages)

$MTR = 75\%$ (6/8 timely messages)

System Knowledge

System Knowledge is analytic MOP that reflects amount and quality of information available to the Cdr (e.g., via COP, radio).

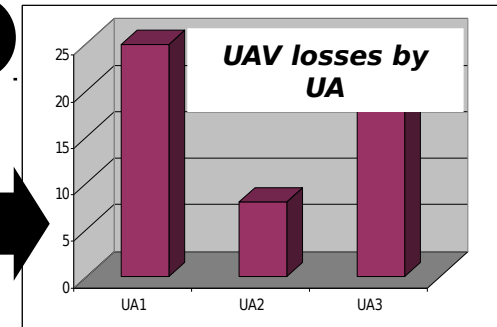
3



Reduced & inaccurate information precludes effective targeting of Red ADA.

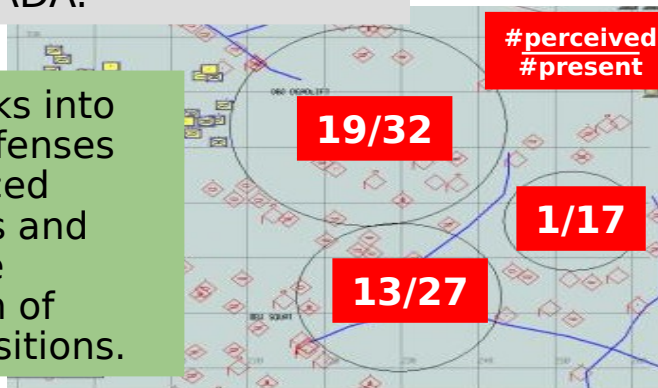
More Red ADA survives; enemy destroys critical UAVs & further reduces available information

4

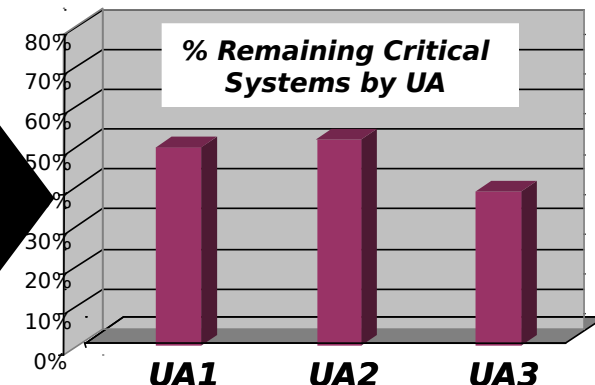


5

Unit attacks into enemy defenses with reduced awareness and inaccurate perception of enemy positions.



Combat ineffective UAs



Potential Training Pay-Off of Comms Modeling

2003 FCS AoA with Modified JCATS

Communications Nodes Experiencing Losses of Connectivity at Least One Time During Each Run

	Alpha	Bravo	Charlie	Delta	Recon
BLK I run 1	25/35 (71%)	25/35 (71%)	4/13 (31%)	2/13 (15%)	8/18 (44%)
BLK I run 2	28/35 (80%)	28/35 (80%)	9/13 (69%)	2/13 (15%)	13/18 (72%)
BLK I run 3	27/35 (77%)	28/35 (80%)	4/13 (31%)	2/13 (15%)	9/18 (50%)
PiP'd SBCT run 1	14/30 (47%)	9/30 (30%)	5/30 (17%)	NA	5/8 (63%)
PiP'd SBCT run 2	10/30 (33%)	6/30 (20%)	6/30 (20%)	NA	2/8 (25%)
INC 1 run 1	0/35 (0%)	15/35 (43%)	0/13 (0%)	0/13 (0%)	4/18 (22%)
INC 1 run 2	1/35 (3%)	7/35 (20%)	0/13 (0%)	0/13 (0%)	5/18 (28%)
INC 1 run 3	4/35 (11%)	14/35 (40%)	0/13 (0%)	0/13 (0%)	15/18 (83%)
INC 1; Exc	5/35 (14%)	11/35 (31%)	4/13 (31%)	1/13 (8%)	16/18 (89%)
BLK I; Exc	5/35 (14%)	5/35 (14%)	0/13 (0%)	0/13 (0%)	8/18 (44%)

Recon units consistently experienced commo losses, due to forward deployed posture.

Legend
67 - 100%
34 - 66%
0 - 33%

Primary effect of commo losses was the hindering of dynamic planning.

Bn Cdr "learned" to mitigate commo losses in successive trials by reducing dispersion of line companies and rerouting UAVs.

	PiP'd SBCT	INC 1	BLK I
Total Blue Commo Nodes Tracked	98	114	114
Commo Nodes Destroyed while Connected	42	38	16
Commo Nodes Destroyed while	3	4	11

Network Operations Scenario Complexity

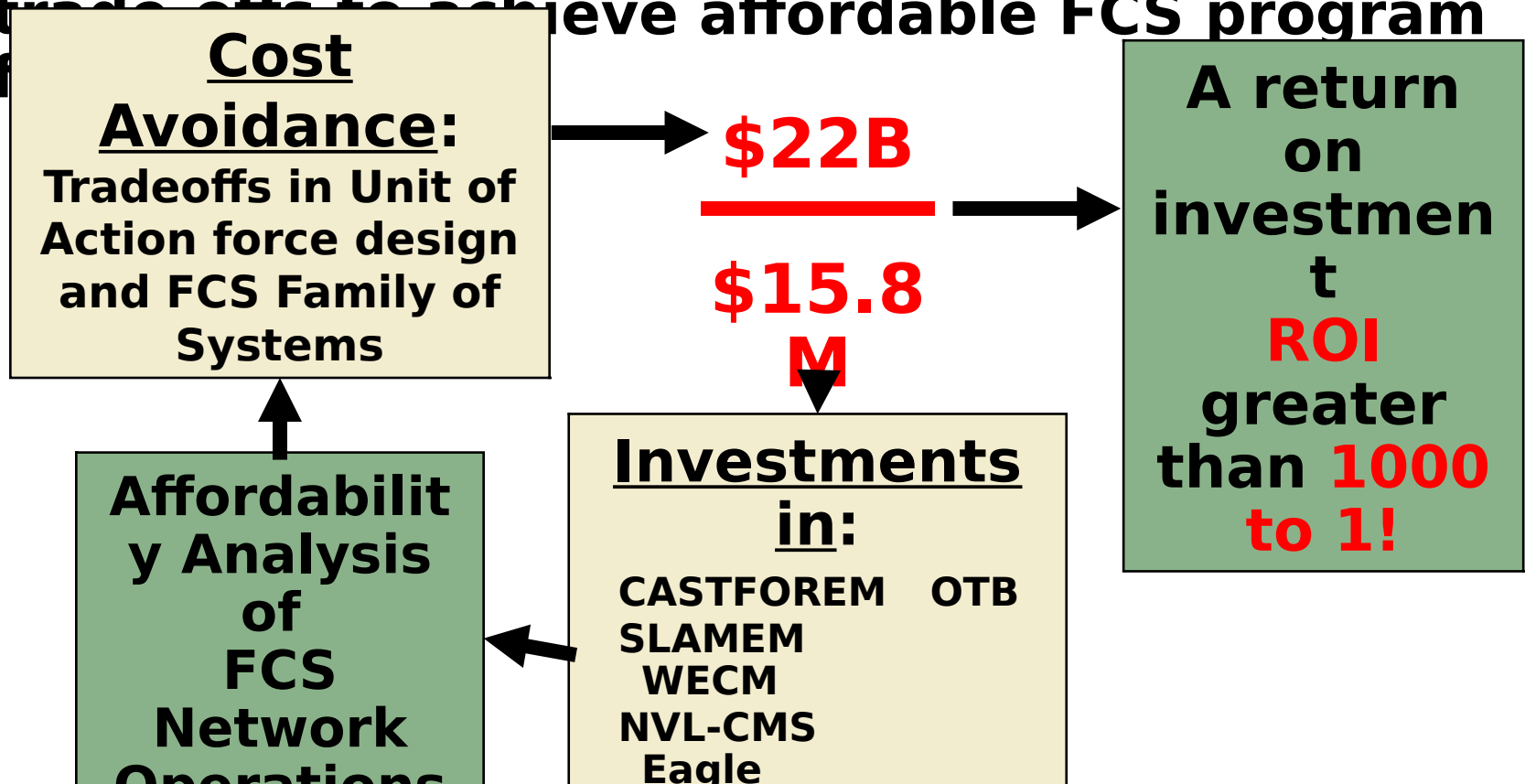
2004 FCS KPP Analysis

Accounting for the full networked capabilities of the FCS-equipped UA has dramatically increased the complexity of simulated brigade scenarios.

Factor	Balkans SBCT*	Caspian UA**
Scenario implementation	2.5 mos X 3 WYs	6 mos X 8 WYs
Number of Blue soldiers & systems	1,887	3,694
Number of Red soldiers & systems	922	5,221
Number of decision tables	2,224	13,479
Number of combat orders	9,537	62,464
Mission time	33 hrs	44 hrs
Computer run time (1 of 21 reps req'd)	4.5 hr	34 hrs
Output file size	3 GB	158 GB
Machine speed	1 GHz	3 GHz
*BBS 21.0, Stryker Bde Scenario, Developed 2000 virtual memory required	2000 128 MB	**Caspian 20.0, FCS UA 3 GB

Army SMART Investment in Network Modeling

- Targeted investments in modeling (by FCS program and Army G3 through SMART program) enabled analysis of FCS networked operations.
- The analytic evidence underpinned program trade-offs to achieve affordable FCS program



Summary

- **The Army has achieved a first-ever DoD modeling capability, one vital to network-enabled operations.**
- **The modeling methods have been proven to work (albeit first-time), and will evolve and mature over time with their use.**
- **The methods are not sustainable without recognition of their importance and appropriate dedicated funding.**
- **This is a “*no-brainer*” investment decision; the only issue is how.**
- **The funds required and their management are still to be worked.**

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**PROGRAM OBJECTIVE
MEMORANDUM
(POM)
FY06-11**

UPDATE

Mr. Gordon Weed

WHERE ARE WE NOW IN THE CYCL

Planning:

- TAP 2006-2026 completed and published. Major changes include Army Transformation Road Map and, Section IV Transformation Campaign Plan.

Programming:

- PEG Requirements completed (BF 5.0) PEG funding due 30 April (PF1.0)
- PEG 1-n S: June 17

Budgeting:

- FY05 President's budget on capitol hill

Execution:

- MACOMs Mid-Year review briefings complete 31 March

FY06-11 STATUS

PEG requirements build complete.

- TT PEG recognized minimal requirements increases
- EE PEG (ZOTH BOS) zero sum requirements and drastically reduced Band 1 UFRs.

PEG POM (Funding) build complete on 30 April

- Technical Guidance Memorandum TBP 13 April. Expect significant changes to funding profiles across all PEGs

POM/BES lock 06/07 scheduled for 2 August

FY06-11 STATUS

AMSO POM Highlights

MDEP TBIS

- Validated and Critical requirements remain constant from POM 05-09
- OneSAF and SIMOPS currently funded slightly above critical requirements

MDEP VMSSO

- IAW ZOTH BOS guidance Band 1 UFRs reduced to zero (Critical Requirements reduced, no additional funding)
- Proposed funding levels fund highest priority missions

FY06-11 STATUS

M&S POM Watch List

TT PEG 1-n

- ACTF
- LVC-IA
- OneSAF
- Experimentation

EE PEG 1-n

- Space M&S
- Experimentation

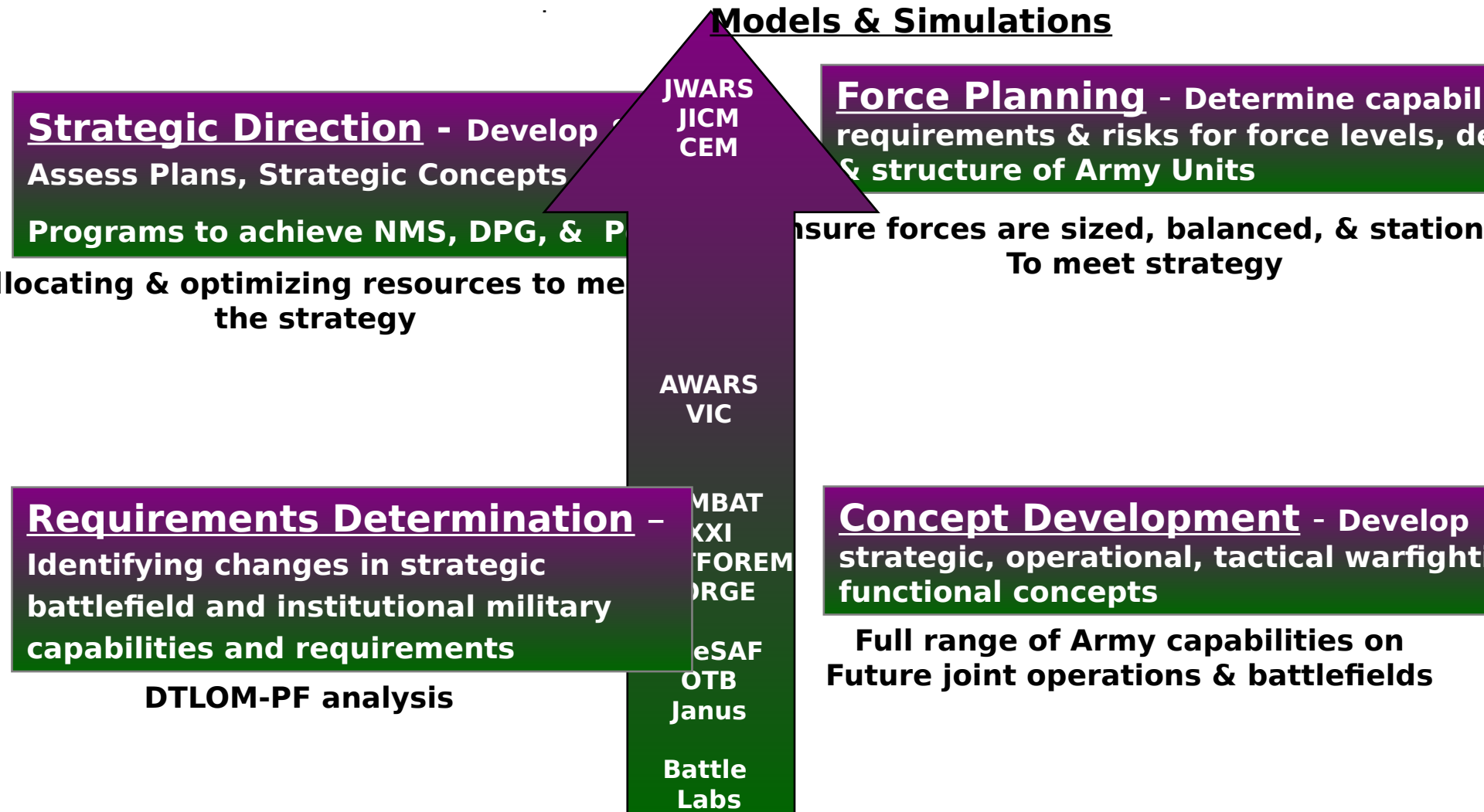
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ACR M&S Domain Evolution Plan FY06-11

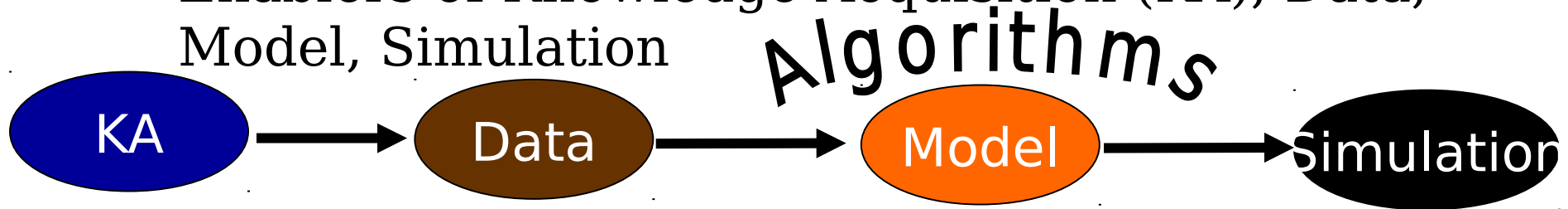
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7 Apr 04
Presented by
Dr. Crain
ACR Domain Manager**

ACR M&S Domain Focus



ACR - Principles

- Assess worth of future concepts and alternative approaches to satisfy capabilities and requirements
- Provide analysis to define Army capabilities and requirements in a joint context
- Enablers of Knowledge Acquisition (KA), Data, Model, Simulation



ACR Battlefield is always 10-20 years out. Our M&S must portray that NOW. M&S must continue to evolve to remain relevant to the future joint battlefield. We are tip of the SMART spear.

M&S Requirements

FY03-07

Transformation Plan

C4I
and Fusion

MOUT

Strategic
Deployment

Small
Scale
Contingencies

FY05-11

Capabilities
Oriented

Campaign Plan

C4I
and Fusion

URBAN
OPERATIONS
MOUT

JCCA
Strategic Deployment
Small Scale Contingencies

LOG

Soldier

OE
Operational Environment

Capabilities Priority FY06-11

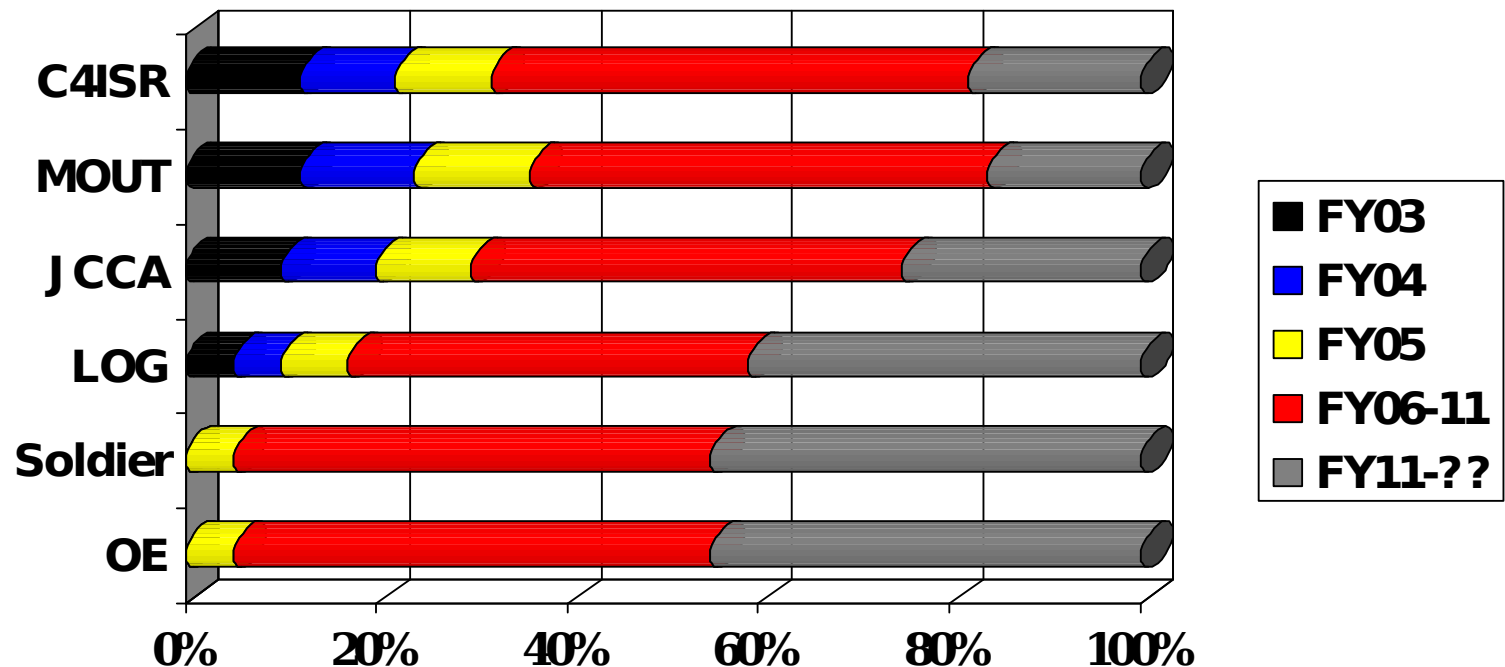
<u>Capability</u>	<u>Proposed Development</u>	<u>Potential M&S Affected</u>
C4I & Fusion	Sensors, Communications, Situational Awareness, Fusion, Information Operations, Decision-making, Networked Fires, Control, Threat	CASTFOREM, OneSAF, VIC, JVB, COSAGE, JICM, AWARS, COMBAT ^{XXI} , BLCSE
MOUT	Search & Tgt Acquisition, Mobility, Environmental Representation, Weapons Effects, Soldier Behaviors, Tactical Communications	OneSAF, COMBAT ^{XXI} , IWARS, ACQSIM, JCATS, AWARS, BLCSE, VIC
JCCA	Campaign Simulation, Contingencies, CBRN	JICM, MOBCEM, JWARS, VIC, AWARS, COMBAT ^{XXI} , FPM
LOG	CSS C4I, Fuel, Arm, Fix, Sustain, Man, Distribution Network	AWARS, COMBAT ^{XXI} , OneSAF, COSAGE, JICM, FORGE, VIC, JDLM, BLCSE
Soldier	Situational Awareness, Lethality, Mobility, Equipment Trustworthiness	CASTFOREM, COMBAT ^{XXI} , IUSS, Janus, JCATS, OneSAF, CAEn, TIREM, AWARS, ACQUIRE, BLCSE
Operational Environment	Noncombatants, Factions, Surrendering units, Exploit Blue ROE, Deception/Decoys, Terrain, Weather	CASTFOREM, Janus, JCATS, VIC, MATREX, COSAGE, JICM, COMBAT ^{XXI} , OneSAF, JWARS, AWARS, BLCSE

Capabilities in BLUE are currently in MAWG stat

Capabilities will be shared with TEMO and RDA Domain

Capability Achieved

Notional



Summary

- FY06-11 POM has increased ACR Domain Capability areas
- Year of execution will determine actual amount of work to be accomplished; actual \$\$ amounts may cause slip in completion of sub-tasks w/in Capability category
- Capability achievements will affect much of the ACR Domain M&S, these achievements will be transferable to the TEMO & RDA Domains
- Intent is to have more effective M&S by end of POM FY06-11

AGENGA 2 Hours

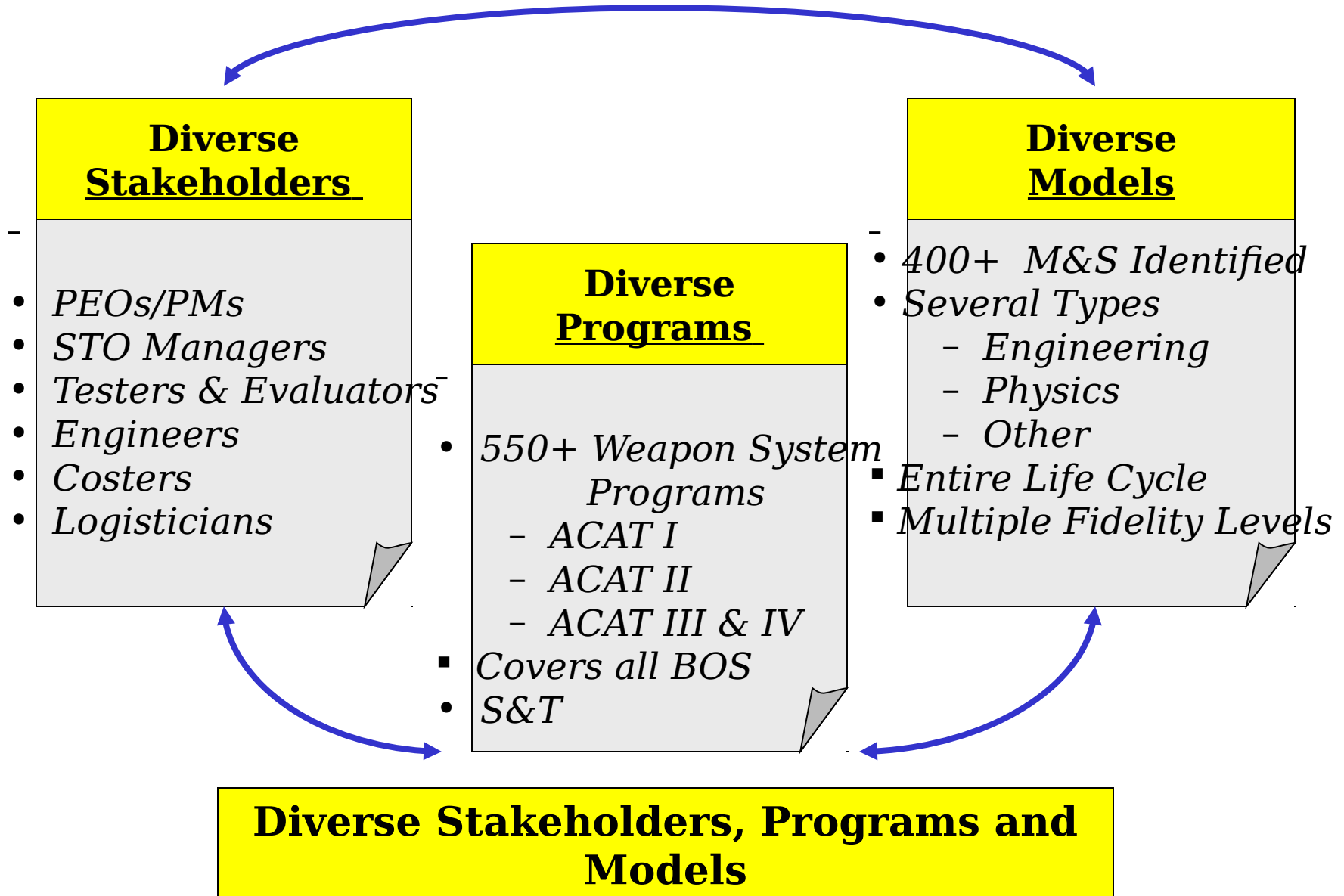
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RDA M&S Domain Evolution Plan FY06-11

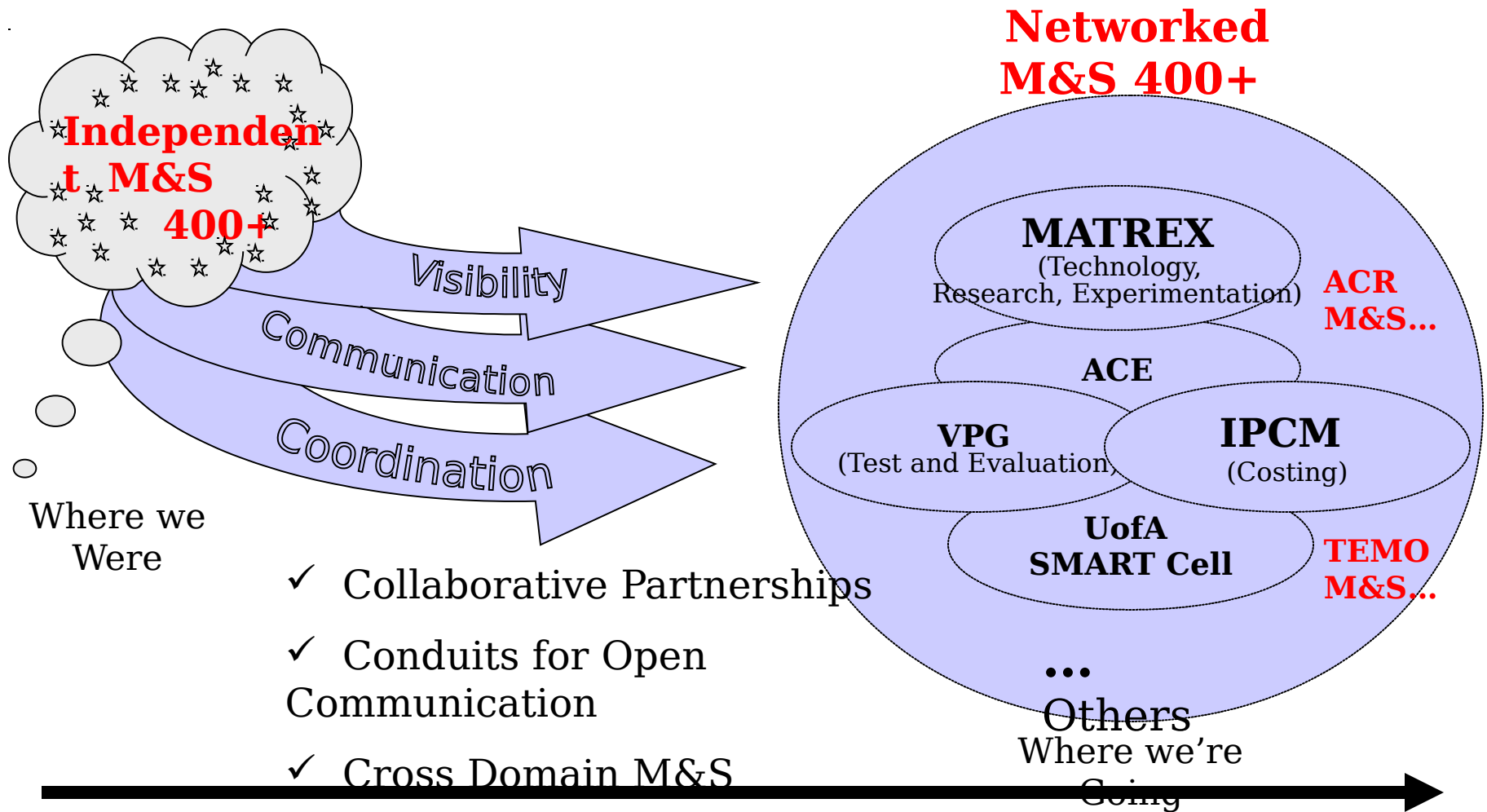
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RDA M&S Domain

The Operating Environment

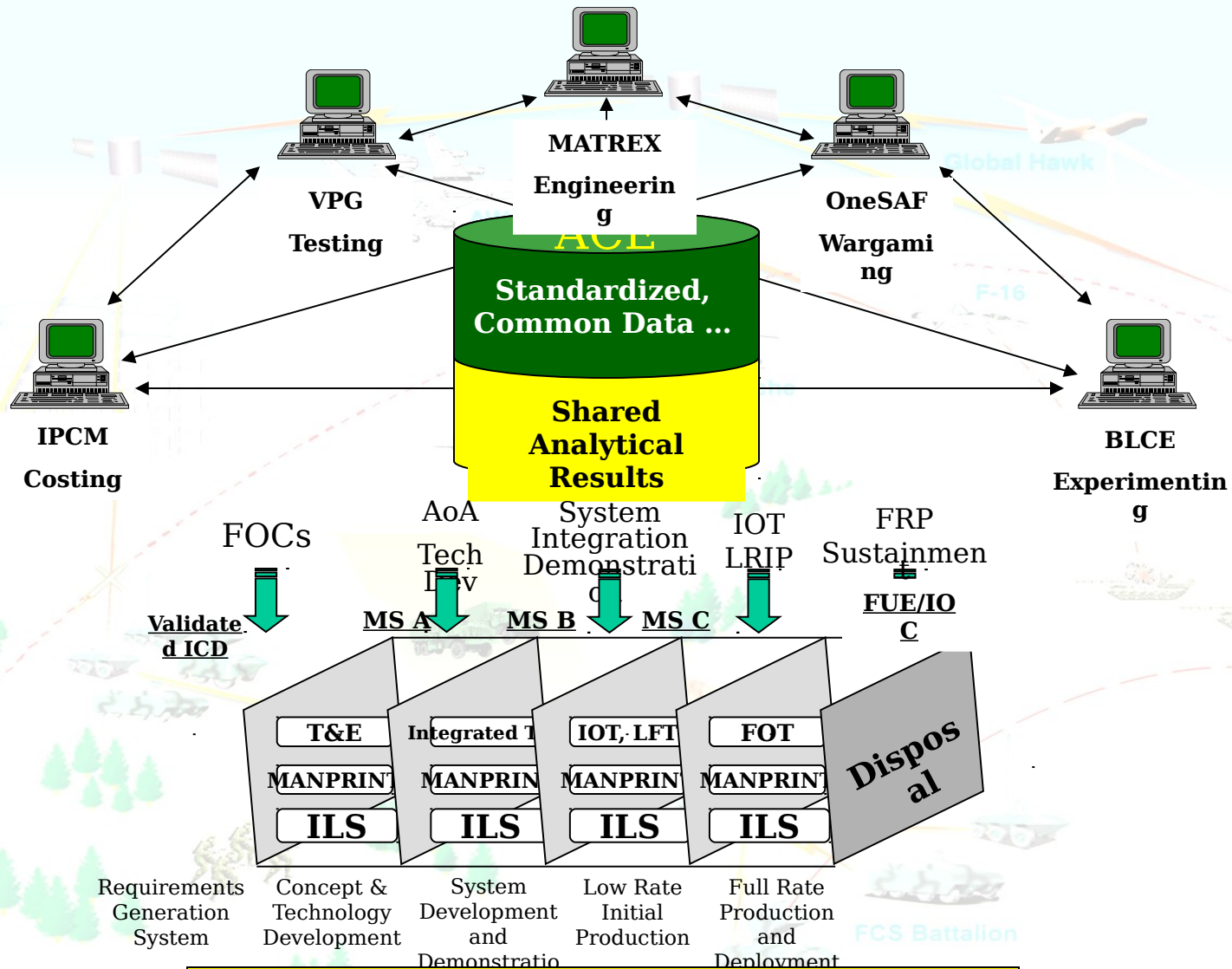


RDA M&S Evolution Strategy



Increasing Collaboration and Distributive Funding and M&S Implementation is by Stakeholders

Increasing Collaboration and Distributive Networks



**Results in Better Integrated Capabilities,
Savings in Cost and Time, and Reduced Risk**

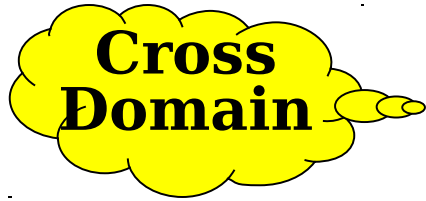
Visibility, Communication, & Coordination

- ✓ Conferences: Hosted Four RDA M&S Community Group Meetings for all Stakeholders (35 to 100 Attendees for Each)
- ✓ Data: Finalized, Briefed, and Provided to AMSO Data Base a Data Call of 400+ M&S in the RDA Community
- ✓ Policies: Provided Acquisition Perspective on M&S Policies and Regulations
- ✓ Education: Coordinated the Development with AMSO of a One Day M&S Class for PMs with the First Class Scheduled for 15 APR 04
- ✓ Newsletter: Developed and Implemented Quarterly RDA M&S Newsletter
- ✓ Coordination/Liaison:
 - Daily/Weekly Basis, Informs Stakeholders/Other Domains of Current Issues, Reviews, Policies, Events, and Statuses

Final Thoughts

RDA M&S Domain Evolution

Strategy



- ✓ **Reality of a Diverse and Huge Operating Environment**
- ✓ **Cross-Domain Collaborative Environment must Prevail**
- ✓ **What more can we do to Foster a Cross-Domain Approach?**

AGENGA 2 Hours

SUBJECT	Presenter(s)	Time
Welcome & Opening Remarks	Mr. Lunceford	10
Geospatial Master Plan	COL Stone	20
C3 Modeling Environment	Mr. Bauman	20
POM Status	Mr. Gordon Weed	10
Domain Evolution Plans	Domain Managers	30
AMSEC Chair & Vice Chair Discussion	Mr. Hollis	25
Recap Actions	AMSO	5

TEMO M&S Domain Evolution Plan FY06-11

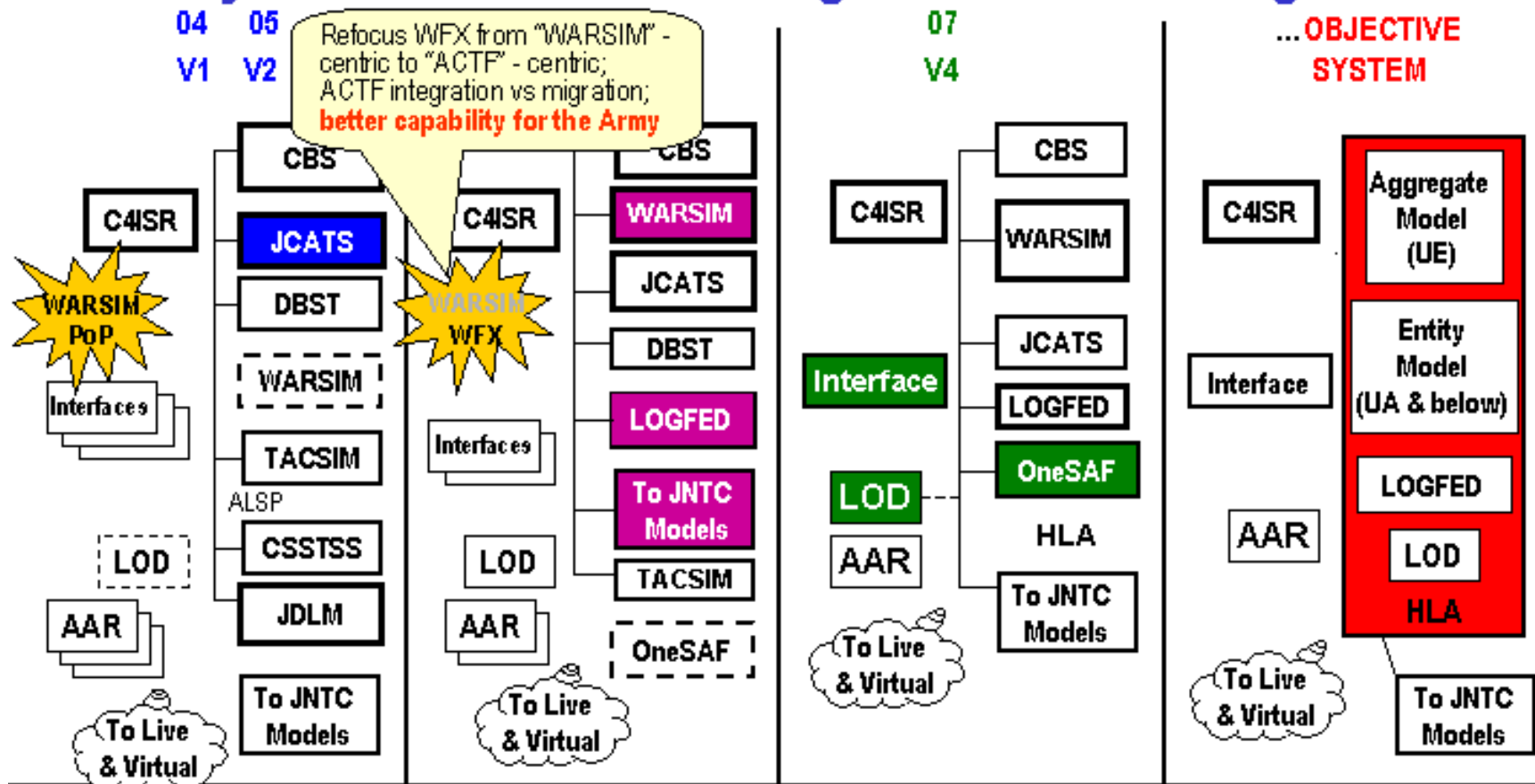
**Briefing to
AMSEC
7 Apr 04
Presented by
COL Wildemann**

A collage of images related to the military and defense industry. It features soldiers in various settings, including one operating a computer, another in a helmeted vehicle, and a third in a field. There are also images of military aircraft, including a large transport plane and a helicopter, and various military vehicles like jeeps and trucks. The collage is set against a background of a blue sky with clouds.

Army Models and Simulations Executive Council (AMSEC)

↑

Army Constructive Training Federation Integration



The *ACTF* integration focuses on *JOE* enhancements throughout . . .

- Brigade Ops PoP
- Urban Ops
- SOF
- ISR, IO
- Joint / Service Interface
- LVC Interfaces
- Multi-sided

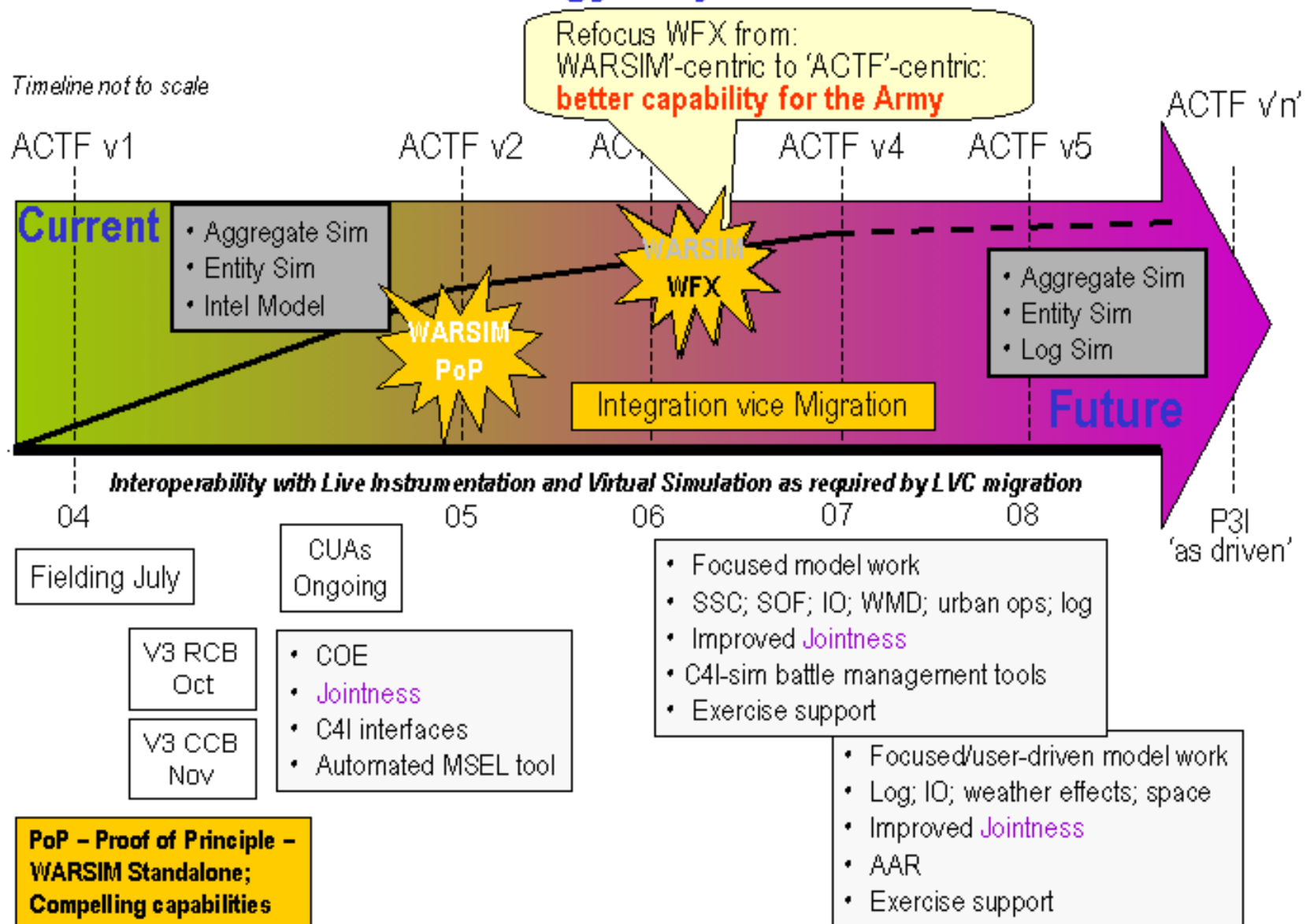
- Enhanced models / scalability
- Logistics
- Enhanced Joint / Service Interfaces
- C4I Interface (partial)
- IO & IW
- HUMINT

- Enhanced models / scalability
- Enhanced logistics
- C4I Interface (final)
- Enhanced Joint / Service Interfaces

- Operation Desert Storm
- Operation Iraqi Freedom
- Operation Enduring Freedom
- Haiti
- Philippines
- Next??

Strategy Adjustment

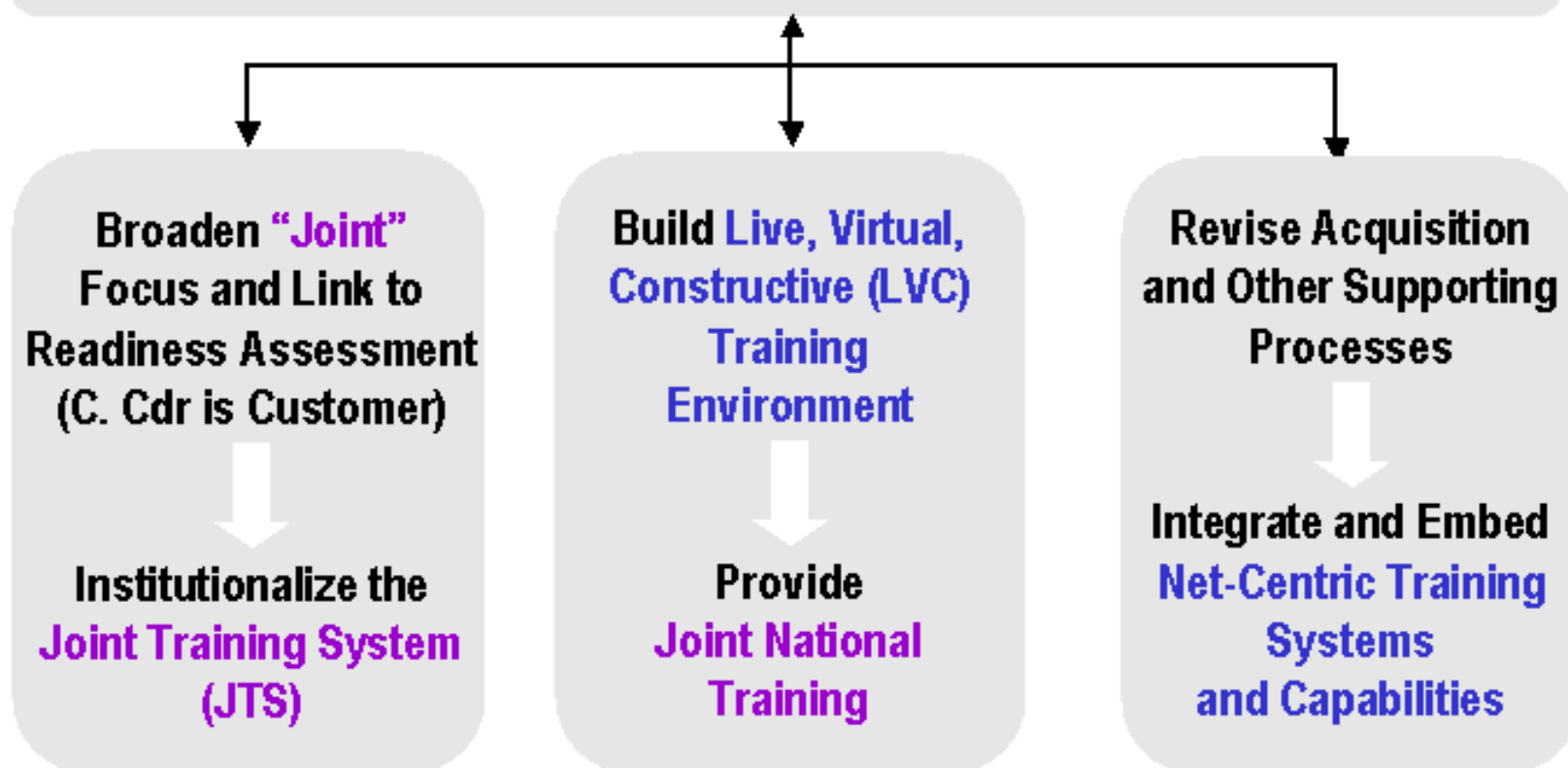
Timeline not to scale



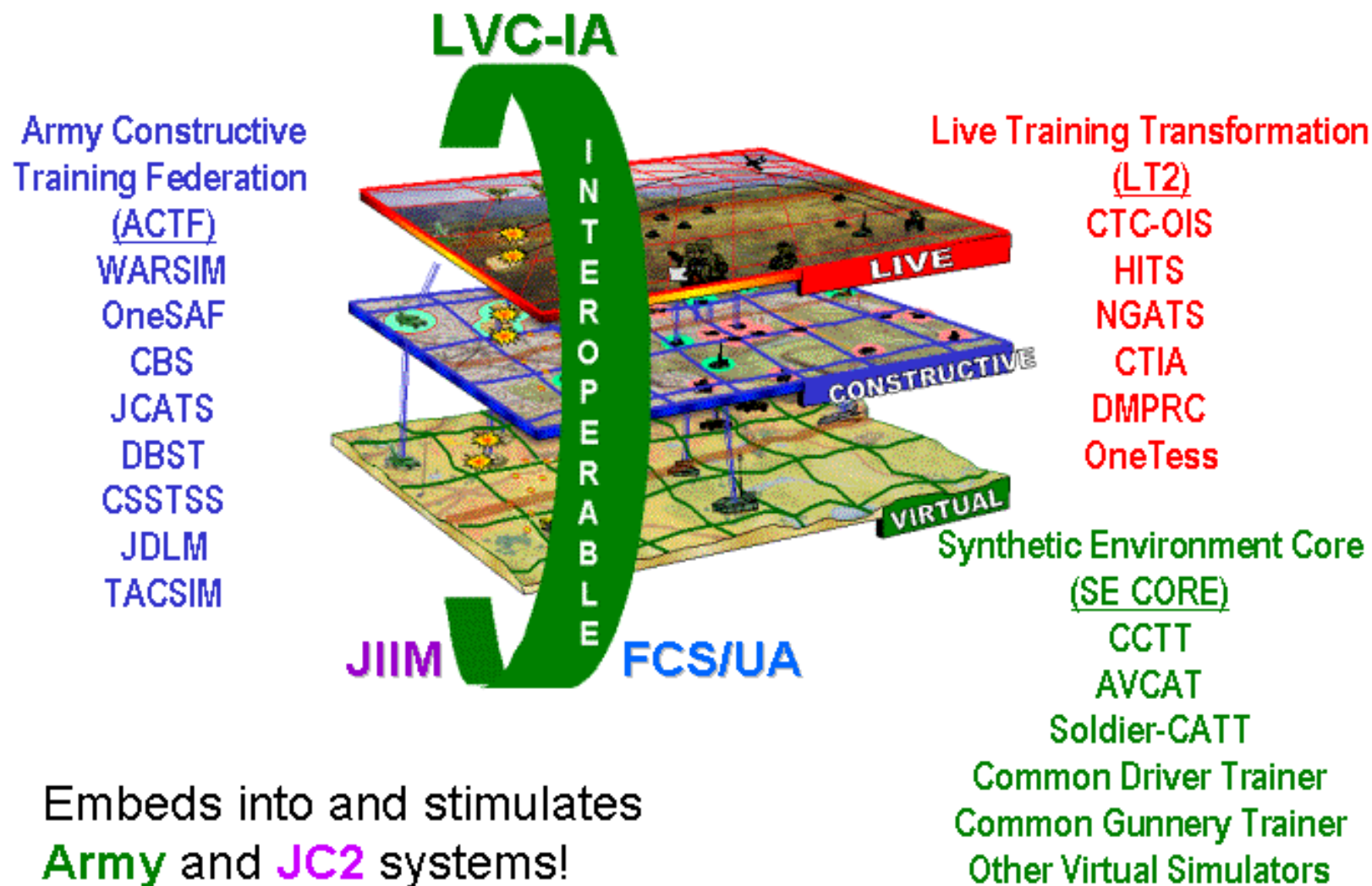
Training Transformation

Vision and Goals

Provide **dynamic, capabilities-based training** for the **Department of Defense** in support of national security requirements across the full spectrum of **service, joint, interagency, intergovernmental, and multinational operations.**



Live Virtual Constructive – Integrated Architecture



AGENGA 2 Hours

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AMSEC CHAIR

Discussion

Mr. Walt Hollis

AMSEC 04-1 Taskers:

1. Geospatial - Hollis directed AMSO to draft a letter to be jointly signed by the Chair and Vice chairs to National Geospatial-Intelligence Agency (NGA) delineating what the Army's needs are in Geospatial terrain.
Lead: COLStone, suspense: prior to 1 June 2004.
2. Geospatial - LTG Cody directed AMSO to determine Geospatial responsibilities by agency and locate where digital libraries exist.
Lead: COL Stone, suspense: Report to Fall AMSEC.
3. LTG Griffin directed we invite other services to work with the effort Mr. Bauman is leading for modeling and communications networks.
Lead: LTG Griffin
4. Mr. Hollis directed AMSO document in the AMSEC minutes that the Army has the staff responsibility for Geospatial efforts; and place that responsibility in Battle Command. (AMSO)--Completed